Complete Summary

GUIDELINE TITLE

Procedure guideline for tumor imaging using F-18 FDG.

BIBLIOGRAPHIC SOURCE(S)

Society of Nuclear Medicine. Procedure guideline for tumor imaging using F-18 FDG. Reston (VA): Society of Nuclear Medicine; 1999 Feb. 20 p. (Society of Nuclear Medicine procedure guidelines; no. 2.0).

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Neoplasms

GUIDELINE CATEGORY

Assessment of Therapeutic Effectiveness
Diagnosis
Evaluation
Risk Assessment

CLINICAL SPECIALTY

Nuclear Medicine
Radiology

INTENDED USERS

Allied Health Personnel
Physicians

GUIDELINE OBJECTIVE(S)

To assist nuclear medicine practitioners in recommending, performing, interpreting, and reporting the results of tumor imaging using F-18 FDG.

TARGET POPULATION

Adults or children with diagnosed or suspected malignant disease

INTERVENTIONS AND PRACTICES CONSIDERED

Tumor imaging using 18-fluoro-2-deoxyglucose (F-18 FDG)

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Literature searches were performed. In addition, references known to experts and references from the nuclear medicine community were considered.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Drafts of the guideline were submitted to members of the Guideline Development subcommittee (methodologists) and the Task Force (subject experts). These reviewers indicated on a line-by-line basis any suggestions or recommendations for the revision of the guideline. The percentage of agreement for all reviewers was calculated for each revision and compiled by the Society of Nuclear Medicine (SNM) central office. It is expected that the percentage of agreement will increase with each revision.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

When the Task Force and Guideline Development Subcommittee completed their edits, draft procedure guidelines were distributed to the Society of Nuclear Medicine (SNM) Sample Review Group for comment. (The SNM Sample Review Group is a cross-section of approximately 100 nuclear medicine practitioners representing every field of specialization).

The guideline was approved by the SNM Commission on Health Care Policy, the Board of Directors, and the House of Delegates.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Background Information and Definitions

There is a growing body of evidence for the use of FDG in the differentiation of malignant from benign disease, staging and grading of malignant disease,

differentiating recurrent or residual disease from therapy induced changes, and monitoring the response to therapy.

Depending on the clinical question and type of equipment available, the FDG imaging procedure may include:

A. Limited Field Tomographic Images: usually performed when critical abnormalities are likely to be localized in a known region of the body (e.g. probable lung carcinoma, evaluation of hilar lymph node involvement)
B. Dynamic Tomographic Images: consist of multiple sequential three dimensional images in a limited field. This type of acquisition is often used when quantitation of regional metabolic rates is needed.
C. Whole Body Tomographic Images: usually performed to survey the entire body in the search for areas of abnormal FDG accumulation.
D. Attenuation Correction: the method for correcting emission photon attenuation by either:
    1. Transmission Imaging: A set of corresponding images are acquired with an external source of radiation. Typically, these images are acquired with PET.
    2. Mathematical Attenuation Correction: typically used in brain imaging, where an estimated attenuation correction based on the emission data may be used instead of actually acquiring transmission data.
    3. Hybrid Attenuation Correction: This method consists of a short (approximately 2 minutes) transmission measurement, followed by an image segmentation to generate a calculated attenuation map.

Common Indications

- differentiation of benign from malignant lesions
- staging of malignant disease
- grading of malignant brain lesions
- differentiation of recurrent or residual malignant disease from therapy-induced changes
- monitoring the response to therapy

Procedure

The detailed procedure recommendations in the guideline address the following areas: facility/personnel, patient preparation; information pertinent to performing the procedure (i.e., important data that the physician should have about the patient at the time the exam is performed and interpreted); precautions; information regarding the radiopharmaceutical (i.e., ranges of administered activity, organ receiving the largest radiation dose, effective dose), image acquisition; interventions; processing; interpretation/reporting; quality control, and sources of error.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Not stated

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

The intent of the procedure guideline is to describe tumor imaging using F-18 FDG, in order to maximize the diagnostic information obtained in the study while minimizing the resources that are expended.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The Society of Nuclear Medicine has written and approved guidelines to promote the cost-effective use of high quality nuclear medicine procedures. These generic recommendations cannot be applied to all patients in all practice settings. The guidelines should not be deemed inclusive of all proper procedures or exclusive of other procedures reasonably directed to obtaining the same results. The spectrum of patients seen in a specialized practice setting may be quite different than the spectrum of patients seen in a more general practice setting. The appropriateness of a procedure will depend in part on the prevalence of disease in the patient population. In addition, the resources available to care for patients may vary greatly from one medical facility to another. For these reasons, guidelines cannot be rigidly applied.

Advances in medicine occur at a rapid rate. The date of a guideline should always be considered in determining its current applicability.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Society of Nuclear Medicine. Procedure guideline for tumor imaging using F-18 FDG. Reston (VA): Society of Nuclear Medicine; 1999 Feb. 20 p. (Society of Nuclear Medicine procedure guidelines; no. 2.0).

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1999 Feb

GUIDELINE DEVELOPER(S)

Society of Nuclear Medicine, Inc - Medical Specialty Society

SOURCE(S) OF FUNDING

Society of Nuclear Medicine (SNM)

GUIDELINE COMMITTEE

Task Force

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

The Task Force consists of members from both academic and nonacademic practice settings.

Names of Task Force Members: Carl Hoh,MD, Chair; Manuel Brown, MD; Magnus Dahlbom, PhD; Farrokh Dehdashti, MD; James O'Donnell, MD; Heinrich Schelbert, MD, PhD; and Richard Wahl, MD.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline. This guideline updates a previously issued version (Procedure guideline for tumor imaging using F-18 FDG: 1.0. Society of Nuclear Medicine J Nucl Med 1998 Jul;39(7):1302-5).

An update is not in progress at this time.

The guideline developer states that the guideline is subject to a bi-annual update/revision cycle.

GUIDELINE AVAILABILITY

Electronic copies: Available from the Society of Nuclear Medicine (SNM) Web site.

Print copies: Available from SNM, Division of Health Care Policy, 1850 Samuel Morse Dr, Reston, VA 20190-5316; Phone: 1-800-513-6853 or 1-703-326-1186; Fax: 703-708-9015; E-Mail: ServiceCenter@snm.org.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Society of Nuclear Medicine. Procedure guideline for guideline development. Reston (VA): Society of Nuclear Medicine; 2001 Jun (version 3.0).

  Electronic copies: Available from the Society of Nuclear Medicine Web site.

- Society of Nuclear Medicine. Performance and responsibility guidelines for NMT. Reston (VA): Society of Nuclear Medicine; 2003.

  Electronic copies: Available from the Society of Nuclear Medicine Web site.

Print copies: Available from SNM, Division of Health Care Policy, 1850 Samuel Morse Dr, Reston, VA 20190-5316; Phone: 1-800-513-6853 or 1-703-326-1186; Fax: 703-708-9015; E-Mail: ServiceCenter@snm.org.

NGC STATUS

This summary was completed by ECRI on July 20, 1999. It was verified by the guideline developer as of August 5, 1999.

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Date Modified: 11/15/2004